

REMARKS

Applicants respectfully request reconsideration of the present application in view of the following commentary.

Rejection of Claims under 35 U.S.C. § 103(a)

The Examiner rejected claims 31-47 for alleged obviousness over de Vos, *Antonie van Leeuwenhoek* 1996, Vol. 70: 223-42, in view of Sijpesteijn, *loc. cit.* 1970, Vol. 36: 335-48, and U.S. patent No. 5,580,787 to Wessels *et al.* Applicants respectfully traverse the rejection.

The Examiner contends that “one would have been motivated to increase the yield of biomass in a culture of lactic acid bacterial cells by increasing the activity of the enzymes involved in the uptake or degradation of a carbon source” based on the teachings of de Vos. Office Action, page 3. Applicants respectfully disagree.

Contrary to the Examiner’s contention that the uptake or degradation of a carbon source is **increased**, the culture of lactic acid bacterial cells prescribed by claim 42 are characterized by a reduced glycolytic flux, which is achieved by a **reduction** in the uptake and/or degradation of a readily degradable carbon source, such as glucose and lactose. See the published application at paragraphs [0067] – [0069], for example. Accordingly, de Vos indeed teaches away from the claimed invention.

de Vos thus includes no disclosure on an increased yield of biomass, let alone any suggestion how one might achieve increased biomass. Accordingly, de Vos evidences no motivation for the skilled artisan to come up with the claimed invention, as the Examiner contends.

The Examiner fails to establish a *prime facie* case of obviousness because the stated rationale for rejection is based on faulty grounds. For this reason alone, the obviousness rejection should be withdrawn.

For the sake of completeness, Applicants discuss the secondary references as follows:

Sijpesteijn is cited for its teaching to meet certain limitations of the dependent claims. Nevertheless, Sijpesteijn does not remedy the deficiency of de Vos as stated above by providing any description that the lactic acid bacterial culture has a reduced glycolytic flux. In fact, Sijpesteijn discloses that the glucose's presence in the medium is in an excessive amount, such as 1% of the total weight. See page 344, Table 5. Therefore, one skilled in the art would have concluded that the culture condition as disclosed by Sijpesteijn would not be able to cause a reduced glycolytic flux, as recited in claim 42. Moreover, Sijpesteijn describes that the main end product produced by the aerobic glucose metabolism is lactic acid (page 345, third full paragraph), rather than the claimed increased biomass.

By the same token, the Examiner cites Wessels for the alleged teaching of introducing desired genes in lactic acid bacteria cultures. Nevertheless, Wessels also fails to disclose a lactic acid bacterial culture with a reduced glycolytic flux and a respiratory metabolism that displays an increased yield of biomass, as recited in claim 42.

Accordingly, the cited art, either alone or in combination, fails to render the claimed invention obvious. Therefore, Applicants respectfully request withdrawal of the obviousness rejection.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees, which may be required regarding this application under 37 CFR §§ 1.16-1.17, and to credit any overpayment to

Deposit Account No. 19-0741. Should no proper payment accompany this response, the Commissioner is authorized to charge the unpaid amount to the same deposit account. If any extension is needed for timely acceptance of submitted papers, then Applicants hereby petition for such extension under 37 CFR §1.136 and authorize payment of the relevant fee(s) to the deposit account.

Respectfully submitted,

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